GeoTimer 1998 GSA Annual Meeting -- Toronto, Ontario

Abstract 51510

A NORTH-SOUTH CONVERGENT BELT ALONG THE NORTHERN MARGIN OF THE LOS ANGELES METROPOLIS FROM GEODES

Presented by Argus, Donald F..
Authors:
Heflin, Michael B.,
Donnellan, Andrea,
Webb, Frank H.,
Dong, Danan,
Hurst, Kenneth J.,
Lyzenga, Gregory A.,
Watkins, Michael M.,

Key words: continental tectonics, geodesy, San Andreas

In Session 140 Geophysics: GPR, GPS, Earthquakes, Paleomagnetism, and Tectonics (Posters)
Thursday, 29-Oct-98 AM in Room: Hall-E at 8:00 AM for 240 minutes.

Abstract: Geodetic measurements from the So. California Integrated GPS Network (SCIGN)

and prior arrays reveal that 1 cm/year of north-south convergence is

being taken up SSW of the big restraining bend in the San Andreas Fault

and NE of the Pacific plate.

One-half to 3/4 of this convergence is being taken up across

an east- to southeast-trending belt a few tens of km wide along

the northern margin of the greater Los Angeles metropolis.

The convergent belt consists of the Ventura Basin, the ruptures of

the 1971 M= 6.6 San Fernando and M= 6.7 1994 Northridge earthquakes,

and the area between the Sierra Madre Fault (which is

the San Gabriel Mountains frontal fault) and downtown and west Los Angeles.

The data also suggest that south central and downtown Los Angeles may be moving

at a few mm/year eastward relative to the San Gabriel Mountains

and southeastward relative to Santa Monica and Palos Verdes,

which is consistent with, respectively, left-lateral strike-slip along

the Sierra Madre fault and right-lateral strike-slip along the Newport-Inglewood fault.